Vision Screening Program Implemented by Minot State University Nursing Students

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Abstract

This paper provides information on planning and implementing a vision screening program at an existing Adult Health Maintenance Clinic (AHMC) located in Minot, North Dakota. This clinic, sustained by senior students from the Minot State University (MSU), Department of Nursing, services older adults age 65 and up with chronic illness. It provides a frame work for future programs discussing assessment tools, demographics of the population, equipment needs, and policy and procedure. In addition, student preparedness is addressed to prevent falsely scored results, which limit goals and decrease objectives. Prioritizing feasibility, our program will address vision acuity and visual field screening. Educational needs are suggested and students will be encouraged to provide information regarding signs and symptoms of Adult Macular Degeneration (AMD). For systems level collaboration, a A list of vision centers and ophthalmologists, offering discounts for those suffering from financial hardship, will be provided to clients participating in the vision screening. As well, social media is utilized to inform the population about current guidelines addressing need for vision screening, how often to be screened, and warning signs to report to their physician.

Keywords: older adults, vision screening

Commented [NM1]: 55 and older and/or disabled. No chronic illness is required – although our services are based on the most common chronic conditions in our geographic area.

Vision Screening Program Implemented by Minot State University Nursing Students

Upon assessing needs for the Henry Towers AHMC, our group, consisting of four, senior MSU, Nursing students, developed a screening program aimed at increasing the quality of life and reducing risks for the community we serve. This community, whose vulnerability is defined by age, health and socioeconomic deficits, includes adults age 65 and up diagnosed with, but not limited to, diabetes and other chronic illnesses, leaving them susceptible to infection and preventable complications. Most clients are residents of Henry Towers, a low income housing solution, targeted towards older adults and those physically or cognitively disabled. Some individuals, who utilize the AHMC, fall outside these parameters and are referred from podiatrists to receive foot care. Additionally, their low economic status, coupled with few resources promoting health and prevention, along with educational deficits, predisposes this population to poor quality of life and increased risk of injury. Taking these factors into consideration and assessing needs, we are implementing a vision screening program was planned, with subsequent referral notices for those reaching defined criteria, as there is no current program servicing this population. We plan to provide each referral candidate will be provided with a list of collaborative vision centers and ophthalmologists willing to provide discounts for eyewear and exams. With patient education being of utmost priority, we will

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Perhaps …includes adults ages 55 and up. Many are diagnosed with, but not limited to, diabetes and other chronic…

Commented [NM4]: I am still unclear as to how you came to the conclusion that vision screening was needed. Was it a recommendation by the US Preventive Service Task Force? Did you find clues the need in your chart assessment? Did you research common issues of the elderly? Also – when you decided to do it, how did you determine what tests were necessary?

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~~include~~ information will be included regarding when to notify their primary care physician if vision changes or disturbances occur.

Method

Assessments and Measures

To create a successful program, with longevity, each student within our group assumed different roles, so the planning process remained equally distributed. Utilizing the Centers for Disease Control and Prevention model, PATCH, we established a planning model based upon five phases. This enabled us to recognize needs in the population, establish priorities, and commit to a measurable goal (see Appendix A). In order to establish a fluid process for this project, our group developed a GANTT chart, itemizing project job titles, responsibilities, and a flexible timeline to allow for ample planning, adjustments, and revisions (see Appendix B to view GANTT chart). It was mutually decided that Tiffany Rhein, student nurse (SN) oversee completion of the project, Brittany Papp, SN conduct research, Robert Klink, SN analyze data, and Jennifer Greene, SN write the research paper. Also, faculty advisor, Nikki Medalen, BSN, PHN, provided consult services, keeping the proposed program within a reachable and sustainable level. Considering varying clinical schedules between group members, program planning occurred during specified times on campus, and additional information exchange took place during free time.

To best ensure all assessment needs were considered, our group utilized statistical evidence from patient medical charts to glean insight on present care and diagnosis and indicate

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those falling outside the parameters of continuous care. Secondly, we began a search for preexisting services available to this population, to ensure overlap in care would not occur and resources and funding could be used for the greatest good. Upon examination we discovered two programs that served children within the community, but did not serve the population at hand. Both of these programs, Health Tracks, provided by the First District Health Unit of Ward (FDHU) County, North Dakota and The Lion's Club of Minot, North Dakota, provided a framework for our clinical needs and insight to ~~up~~starting a vision screening clinic (see Appendix C and D for both frameworks).

A literature review was conducted to ensure best practices were maintained, and a review of equipment was directed to provide the most effective methods of screening at the lowest cost possible. As well, we researched recommended guidelines, provided by the U.S. Preventive Services Task Force's screening for impaired visual acuity in older adults. Within their recommendations, ~~they include~~ advisement from The American Academy of Ophthalmology, who "recommends comprehensive eye examinations every 1 to 2 years for persons 65 years or older who have no risk factors", and "The American Optometric Association Consensus Panel on Comprehensive Adult Eye and Vision Examination recommends annual eye examinations for adults 61 years or older" (as cited in U.S. Preventative Services Task Force, 2009, p.38). Although self-reported vision changes are helpful in identifying individuals requiring vision acuity testing, they are not as effective as vision acuity screens in identifying individuals needing follow up care.

While we don't expect resistance to our screening program, concern remains that follow up compliance may be limited, as lack of transportation, financial concerns, and education on available resources may prevent the population from making and keeping referral appointments.

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We hope to counteract this by providing ample education and resourceful information to each client, and informing the clients of available public transportation, so continuity of care continues.

Sample and Participation Selection

Upon review of medical charts, maintained by students and faculty, we discovered the population includes 44 patients, with mean age of 70.7 years and a median age of 71. Further inspection revealed 27 females and 17 males, consisting of 31 individuals using glasses and 13 without. To assess client self-stated needs, a questionnaire was created by our group and administered to residents of Henry Towers during an active AHMC (see Appendix E for a copy of the questionnaire). In this instance, residents were asked to complete the questionnaire, to the best of their ability and given an explanation of its use. Utilizing this convenience sample of 11, review of data indicated 10 individuals wearing glass, 9 of which, reported visual disturbances. Additionally, those who have sought treatment within the last 6 months total 3, those who have sought treatment within the past year but greater than 6 months equals 1, and individuals who have sought treatment greater than 1 year, but less than 5 years equates to 2 clients. As well, 5 Five clients reported they had not sought treatment in over 5 years. Upon follow-up questioning, 1 participant stated financial issues as primary cause of screening lapse, and 1 participant stated lack of time resulted in the same.

<div align="center">Discussion</div>

Policy and Procedure

Currently, we only plan on including existing clients of the AHMC and residents of Henry Towers, as funding, manning and logistical concerns prevent additions to the program. Our program goal is to ensure all members of the AHMC and residents of Henry Towers receive vision screening, including acuity and glaucoma assessments, within the Ophthalmologic

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Association guidelines and are referred to proper agencies that offer visions tests and glasses. Our mission is to provide all members of this population resources, so they can maintain a higher quality of life, without risk of injury due to decreased eye sight. This will be a free service offered to all clients without prejudice. Donations will be accepted but not mandated to offset incurred costs of supplies. To facilitate this, an envelope will placed next to the client, so they can discreetly choose to donate what they feel they can afford.

Feasibility

The feasibility of this program is strengthened by the preexisting AHMC, maintained by the MSU Nursing Program and support from overseeing faculty member Nikki Medalen, BSN, PHN. Administrative costs will be nonexistent, as students from the nursing program will be conducting vision screening, as part of their clinical hours related to public health. This not only provides a valuable service to the community, but it strengthens relationships between the population and the nursing program, leading to increased opportunities for future nursing students to collaborate with agencies and expand program goals. As well, it allows for continuity of care and case management, as medical records will be maintained by the MSU nursing department, and faculty can advise future students about each client and their specific vision needs.

After consulting with several, local ophthalmologists and vision centers, we acquired pricing information for acuity screens and extensive eye exams, costs of lenses and frames, methods of payments available to this population, and discussed with each establishment available discounts for those referred from our program. We will provide this list of providers to each client receiving a referral, to help facilitate communication between the client and their

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chosen ophthalmologist. Group members will combine this list to include all resources and pricing discounts (see Appendix F). Additionally, the local Lion's Club chapter has informed us that they offer assistance those meeting a financial need. As well, they offer used frames and lenses to those needing assistance.

As previously stated, the program will be run in Henry Towers during an active AHMC, as there is preexisting space and storage necessary to maintain the needs of the program, and available participants to offer service to. This allows for collaboration of resources, as MSU students will be available to screen patients, while clients are receiving foot care, reducing the need for additional clinical time. Resultantly, the use of senior nursing students as primary staff members, creates minimal administrative costs, as it will be incorporated into the required curriculum.

Equipment needed to successfully screen this population and maintain fiscal responsibility includes Snellen charts and eye paddles to assess acuity, and proper execution of a field of vision test for glaucoma. Our startup costs remain low, as our budget for supplies, based upon a 6 month period, approximates to $72.50. When considering ongoing management, our five year budget, accounting for replacement equipment on an as needed basis, totals $725.00. However, if the need arises, and expansion of the program is warranted, a larger budget must be accounted for and additional students will be needed.

In order to sustain the program, we feel, current and future MSU nursing students, registered in the Public Health Nursing class are required to administer proper screens to this population, with overseeing faculty to assist with referrals. Under this construct, students are expected to be properly trained for skills needed to complete assessments.

Screening Procedure

> **Commented [NM6]:** ? This appears to simply be your start up costs X 10 semesters, but you state replacement of equipment would be on an added needed basis. Are you anticipating new Snellen charts and eye paddles each semester? I would think other than loss or fire, these wouldn't have to be replaced in that time. Therefore 5 year budget would be very minimal…maybe replace those once if we are extremely unfortunate?

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For clinical preparedness, students are required to properly perform vision acuity screening, using a certified Snellen chart, as "often times a vision screening is conducted by administrative personnel or volunteers who have little training. While well intentioned, these individuals do not have the knowledge to competently assess screening results" (American Optometrist, 2014). For clients cognitively declined or illiterate, an adjusted Snellen chart is advised for use, as it relies upon shape recognition. According to Jarvis (2012), the Snellen chart should be placed exactly 20 feet away from client, in a well-lit area and within their line of sight. Utilizing a shield, we suggest an ocular occluder, place the device over one eye at a time. If the individual is currently wearing prescription eyeglass, instruct them to leave them on; however, the client should remove reading glasses, as they will blur the image, making results invalid. Encourage the client to read aloud the smallest line possible and proceed to the next smallest line for proper scoring. To ensure accuracy of results, a distance of 20 feet needs measuring, so tests scores are not skewed. As well, assessment of clinic lighting needs to be conducted, to ensure the area is well lit, and the chart is placed at client eye level. Additional observation of space provided will need to be evaluated for optimal placement of charts and timing of the exam.

To assess for propensity to develop glaucoma, a proper visual field ~~vision~~ screen will be administered, utilizing criteria from Jarvis (2012). This assessment requires the administrator to position themselves at eye level with the client and 2 feet away. Both client and administrator will cover one eye contralateral from each other, as a target point is moved from midline of vision to peripheral fields. The client should be instructed to state when target item becomes visible to their line of sight. Administrator should estimate the angle, in which, target recognition is first seen by the client.

Students will follow defined guidelines, as suggested by Dr. Bruce A. Moen, OD for referral purposes. With his experience, he suggests referring clients when visual acuity is reduced by 2 lines or more on a visual acuity chart, unless there is a long standing history of lazy eye. As well, visual acuity with a score greater than 20/40 requires follow up with an ophthalmologist (personal communication, March 11, 2015). With regards to visual field screening, Jarvis (2012) suggests "normal results are about 50 degrees upward, 90 degrees temporally, 70 degrees down and 60 degrees nasally" (p.290). Students must be able to perform an accurate assessment of pulse and blood pressure, and maintain standardized documentation in the patient's charts, so patient centered holistic care remains amongst the continuum. To maintain continuous care, we created a chart sheet, to be placed in the client's medical record to provide baseline information for future students to review (see Appendix G). Finally, a referral form was generated based upon FDHU standard forms and modified to fit the purpose of the screening (see Appendix H).

Limitations of Screening

Initially, our group planned to include screening of AMD within our program definition, but after review of literature, realized it beyond our capability to successfully screen, as "compared with a detailed ophthalmologic examination, visual acuity screening tests are not accurate in the diagnosis of any underlying visual condition, such as AMD or cataracts" (U.S. Preventative Services, 2009, p.38). Few studies have focused on clinical efficacy of administering Amsler grid testing in the clinical setting; however, "one study on the use of the Amsler grid reported poor accuracy diagnosing any visual condition compared with ophthalmologic examination" (U.S. Preventative Services, 2009, p.38). Additionally the same study reports geriatricians accurately diagnose the condition under physical exam.

To counteract this limitation, assessment questions may be considered an option for referral purposes, as loss of central vision reduces quality of life, and the individual becomes "unable to read fine print, sew, or do find work and may have difficulty distinguishing faces" (Jarvis, 2012, p. 285) With the condition affecting 28% of adults aged 75-85, education should be provided on the importance of scheduling annual exams with a primary health provider, so identification of AMD can be identified. Also, "in order to design an effective awareness campaign you must first assess current levels of awareness, knowledge and concern about AMD as well as health information-seeking patterns" (Cimarolli et al., 2012, p. 534).

Social Marketing

To advertise our program, our group developed an educational pamphlet, written on a 6th grade level, to be placed within the clinic facility. While developing this media, we discussed the most effective way to reach our target audience. Considering the demographic, we ruled out newer forms of advertisement, such as social networking methods, as accesses to internet capable devices may present a barrier to information. As well more More traditional forms of advertisement, like television and radio advertisements, appeared out of budget limits and, some residents may not have access to either form. With this in mind our group agreed a pamphlet provided to all individuals would be the best method for outreach. To provide best clinical information we researched suggested guidelines for vision screens and provided information on suggested frequency of screening. Included in the educational material were instances to notify physician immediately about sudden changes in vision or pain located within or around the eye (see Appendix I).

Evaluation

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After evaluating vision screen data, we calculated that a total of 9 residents of Henry Towers utilized the free service. In this subset we discovered a total of 5 clients requiring referrals for Snellen chart failures. Of the 5 referred clients, 4 wear prescription glasses on a regular basis, and all were given printed handouts noting local vision centers offering discounts to the population. All clients passed visual field testing. Oral education concerning the signs and symptoms of AMD was implemented, at a 6th grade level of understanding, so clients could address any vision changes with their primary provider. Upon blood pressure screening, one client required emergency transport, as their values were well outside normal, expected geriatric range. While this action was not the primary focus of our clinic, it emphasizes the importance of screening for chronic illness within a population, and collaborating with other agencies to ensure patient safety and care.

> **Commented [NM7]:** Very nicely stated.

After completing the vision screening clinic, we believe the charting sheet we created needs to be modified to mark which letters were missed during the Snellen vision acuity screen, and similar information should be included on the referral form to be handed to follow up optometrist. Additionally, a prompt to educate the client should be included on the charting sheet. This will not only remind the student to provide information to the client, but it will show documentation that the client did receive the information.

> **Commented [NM8]:** This isn't standard to include which letters were missed. Rather to write it as 20/20 -2, meaning 2 letters were missed on the 20/20 line.

The eye occluders we ordered were not effective, as they had holes that allowed for inaccurate results from the screen. Using flexibility, We then chose to use index cards for occlusion, which worked well, but their expense needs to be included in future budget allocation. Ideally, the purchase of better occluders is recommended because with proper sanitation, they can be used indefinitely. Additionally, we decided to include a PERRLA exam and noted the results on charting sheet, so any abnormalities can be tracked. This was not part of our original

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program design, but we felt it was an easy assessment to include, and could alert students to possible medical complications.

Given small confines of clinical space, we utilized a hallway within the building to assess acuity. We firmly believe a better location needs to be identified, as it lacked natural lighting, and fluorescent overhead lighting was dim, and may have caused eye strain. As well, a quieter environment is recommended, so background noise does not interrupt the screening process or distract the client's concentration.

For collaborative purposes, we believe, an itemized, single health history questionnaire should be developed that includes all screening clinics provided by the AHMC. This questionnaire should be completed by the client prior to visiting stations available, and it should follow the client through the entire process and be maintained in the client's official chart. This will also assist in keeping track of screenings that are beneficial to the client and reduce unnecessary, repetitious questions that may frustrate the individual. As well, the blood pressure obtained initially should be sufficient, as there are limited amount of blood pressure cuffs available for student use. To reduce disorganization between screening groups, we feel, a table should be set up at the entrance of the clinic, so vitals can be assessed from a central location, and the assessment data can be handed off to students performing foot care. Once foot care is completed, assessment information is given to the student conducting the vision screen.

To limit congestion of clinical space, 2-3 students are all that is necessary to run vision screens, as the sample was small and remains contingent on appointments made for preexisting scheduled foot care. This will streamline the screening process, reduce background noise distraction, and maintain organization with implementation. Conversely, if the sample were to

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expand, more students would be needed to prevent an increase in client wait times and provide

fluid movement through the process.

Limitations of Evaluation

Given the restricted time we were able to spend running this program, evaluation of

effectiveness is limited. Currently, we scheduled one day at the AHMC providing vision screens

to a convenience sample of the population. In addition, case management for our group will be

difficult, as we will be unable to follow up with clients to ensure referral appointments are made,

and the client utilizes all available resources. Client satisfaction and evaluation of program

utilization will require additional clinical sessions, and future student participation to accurately

measure effectiveness of the program. As well, adherence to referrals may be contingent on

collaborative efforts between vision centers offering reduced costs to the population. With the

changing economic demographic of our region, reduced priced services may become limited;

thus, creating a barrier to care and compliance.

While current funding costs are low, long term funding may become issue and limit

broadening the scope of the program, as current budget is established upon client donation and

subject to use, based upon priority needs of the AHMC. With primary funding delegated to

maintaining proper foot care supplies, in accordance with evidence based research, replacement

supplies for vision screening may not be feasible.

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Conclusion

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After completing the vision screen, we feel, the need screening is necessary, as 55% of

the clients we screened met referral criteria. Given the small number or participants in our

convenience sample, it is presumed many other clients of the AHMC will benefit from the

screening process, as we expect similar results with subsequent screenings. However, future screens need to be conducted to further assess the population need.

Meanwhile the clients receiving referrals voiced pleasure with information given, regarding follow-up care and providers offering discounts, and indicated they intended to make follow-up appointments with an ophthalmologist. To broaden the scope of this program, future nursing students may find it beneficial to approach additional vision wear centers to include them in the list of providers offering discounts to the population. While we, as a nonprofit service, associated with MSU, cannot recommend a particular business, having all available resources listed for client use, increases collaborative efforts with the local community. This allows the client to independently research all available local discounts and locate a provider that best suits their financial needs.

While space was limited, it suited the needs of this clinic, and provided enough area to assess clients and educate them on eye health. However, a larger population would cause problems, as the Henry Towers AHMC had limited amount of blood pressure cuffs for student use, clinical space, and storage for supplies. If future screenings are implemented, we believe, they need to be conducted independently of other accessory screens, as adequate lighting for vision acuity test is sparse, and clinical space allotted for foot care clinic offers enough natural and artificial illumination to provide proper screening. Given the low cost associated with maintaining this program, we do not foresee any monetary problems arising, as startup costs were low and future purchases should be conducted on an as needed basis.

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    health: guide for the local coordinator. Retrieved from http://www.lgreen.net/patch.pdf

> **Commented [NM11]:** I can't see where in the paper this is cited at. If it isn't cited, you shouldn't include it in the reference list.

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    adults: U.S. Preventive Services Task Force recommendation statement. *Ann Intern Med*,

    151, 37-43. doi:10.7326/0003-4819-151-1-200907070-00007

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Appendix A

Tables illustrating the different phases of the PATCH planning model

A1. Phase I

Community to be addressed	Clients receiving care from the AHMC
Partnerships formed	MSU Nursing program and Henry Towers
Demographic profile of community	Adults aged 65 and up with chronic illness
Community group and steering committee	Group consisting of four MSU nursing students

A.2 Phase II

Obtain community opinion and behaviors	Survey population with questionnaire
Analyze data and determine leading health problem	Review population medical records
Identify ways to share information with the community	Organize itemized list of information acquired for public view

A.3 Phase III

Identify health priorities	Vision screen
Objectives identified	Provide vision screening to the target population and identify those in need of follow up care.
Health priorities to be addressed	Visual acuity, screen for glaucoma, education on the signs and symptoms of AMD

A.4 Phase IV

| Intervention plan	Assess vision acuity and peripheral vision
Identify similar resources	No other regional program exist for this population
Health promotion strategy, set interventions and objectives, and develop intervention plan	We plan to screen for vision acuity and visual fields, while providing education on AMD. Our objectives are to increase the amount of clients screened, so proper referrals can be made. Our time table began in late February and planning needs to be completed by April 23. The vision screening program will be implemented by 4 MSU nursing students.

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A. 5 Phase V

Monitor and assess PATCH	This plan provided ample framework to implement our program
Evaluate interventions	55% of clients met criteria for referral
Community set criteria for success	Maintained preventive services offered by MSU and in conjunction with core functions of public health.

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Appendix B

GANTT Chart
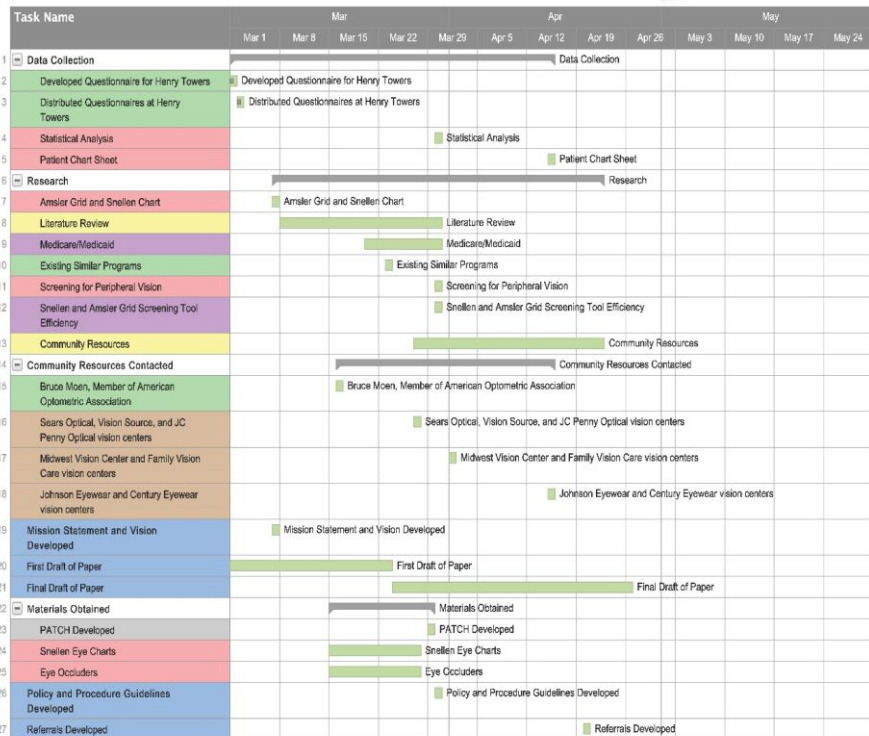
I specifically asked in the first draft to know what the colors meant – do they represent people, or stages of PATCH?

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Appendix C

FDHU screening guidelines

The guidelines for First District Health Unit to do school screenings will be:
• Kindergarten or 1st Grade
• 3rd Grade
• 5th Grade
• Any student (not a whole class) that is referred by teacher or parent
• New students in the 7th grade

This follows the recommendations of the American Optometric Association (2014?) and our optometric resource, Dr. Bruce Moen of Minot.

During vision screening, test for:
1. Visual acuity – Snellen Chart
2. Hyperopia (farsightedness) – Plus Lens test
3. Depth perception- Stereo Fly with 3-D glasses
4. Test color vision in kindergarten or 1st grade only. If time is short, test only the boys.
5. Muscle Coordination - eyes are crossed, head is postured differently during screening.

The Titmus, or Keystone may be used for vision screening. Some false referrals may occur.

Vision screening may be done with a Snellen chart. Hyperopia is tested using a Plus Lens (+1.50 flipper lens) with the Snelling chart. And Stereo Depth Perception is tested using the Stereo Fly with the 3-D glasses.
The optometrists said if students are having trouble, point to a line on the chart to read, or isolate one letter. Encourage the student to "take a guess." Another hint was to tell them the first letter of the line and see if they can continue. They stressed to coax and encourage the students. Refer students who are squinting, turning their head to read the Snelling chart or inappropriate posturing their head. Refer students who fail the depth perception test if they have reduced acuity.
School Vision Screening Referral Criteria given to us by the optometrists at our nurse meeting.
• Visual acuity:
o Preschool:
☐ 20/50 or worse
☐ 2 line difference in visual acuity between right and left eyes.

o First Grade and higher:
☐ 20/40 or worse
☐ 2 line difference in visual acuity between right and left eyes
• Hyperopia: viewing 20/30 or better at distance while looking through +1.50 diopter flipper (Expect vision to be blurry with the flipper.)
• Depth Perception: should include name of test and number correct out of number possible. Failure to appreciate stereopsis and/or failure to achieve expected norms for the test

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used. (When using the stereo test fly card and 3-D glasses, expect student to try to grasp the wings of the fly away from the card.)

• Color vision: Failure of any standard color vision test under conditions specified by the manufacturer

• Muscle Coordination: Easiest by answering several yes/no questions

o Does either eye cross in or out?

 If yes, identify which eye and the direction of the deviation

o Is head lean observed?

 If yes, identify right or left

o Is head run observed?

 If yes, identify right or left

o Significant deviation from expected norms on Keystone or Titmus testing

o Cover/Uncover test showing a strabismic posture

o Alternating cover test showing a significant (greater than 3 mm) deviation

• Ocular health screening: again, easiest if answering several yes/no questions

o Are the eyes excessively red?

o Are the eyes and /or the eyelids mattery?

o Does the student appear photosensitive?

o Do the eyes water easily?

o Do the eyes appear asymmetric in appearance?

> **Commented [NM13]:** Again – issues with bullets? Also wondering about alignment?

Plus Lens Testing

Purpose: A screening procedure to help detect farsightedness (ability to see close-up).

Equipment Needed:

• Visual acuity chart, positioned in well lighted area

• +1.50 lenses

Procedure:

1. First perform regular visual acuity test. Student stands at appropriate distance from chart based on calibration.

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2. Student covers the left eye with the occluder or card. Be sure he/she is not peeking or pressing on eye.

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3. Instructions: "Call out the smallest row of letters you can. Don't squint or peek around the cover." It is helpful to memorize the lines of letters so that you can watch the student during testing rather than the chart.

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4. Record the smallest row for which the student correctly identifies at least half of the letters.

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>
> **Commented [NM18]:** Indent?

5. Repeat for the other eye.

6. Repeat with both eyes together.

7. Now perform the Plus Lens Test: Have student hold +1.50 lenses in front of both eyes (see photo).

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8. Instructions: "Call out the smallest row of letters you can. Remember not to squint."

> **Commented [NM20]:** What photo? Where?

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Expected Findings: A student who is not farsighted will have blurry vision when looking through

the +1.50 lenses.   A visual acuity of 20/40 or worse through the +1.50 lenses is expected for a

child that is not farsighted.

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Appendix D

The Lion's Club guidelines for establishing a Vision Screening (Lion's Club International, 2015)

Organize a Vision Screening
- **Arrange for medical personnel and medical equipment**. Government health departments, universities, hospitals, or private physicians often agree to perform free or low cost public screenings.
- **Obtain legal clearance/permits from local authorities**. Adhere to the appropriate healthcare laws and regulations for your jurisdiction when conducting health screenings.
- **Select a date for the screening**. This date should not conflict with other community events.
- **Secure a location for the screening**. Schools, libraries, houses of worship, community centers or homes for the elderly are among possible locations.
- **Provide advance publicity**. Use social media and other communication channels to notify the public about the date and location of the screening.
- **Stay in touch with community partner**. Medical professionals, manager of screening location, volunteers, etc.
- **Develop procedures to refer participants whose screening results may indicate the possibility of vision or eye health problems**. Refer these participants for further medical evaluation in collaboration with local eye care professionals.
- **Optional**:
    o Plan a screening in conjunction with your October Sharing the Vision Campaign.
    o Offer the adults who attend your screening event appropriate handouts from the Lions Eye Health Program (LEHP), or from your country's optometry or ophthalmological professional organization.

Conducting a Vision Screening

- Organize and set up the screening room.

- Provide free transportation for persons who lack access.

- Assist with record-keeping functions.

- Distribute professional eye health information and publications.

- Provide other assistance to eye care professionals in accordance with local laws and

  regulations.

Follow Up After the Screening

- **Refer participants** whose screening indicates a need for further medical evaluation.

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- **Send letters of appreciation** to persons involved in the screening. This includes healthcare professionals who donated time, community centers that provided a venue and medical companies or local healthcare providers that donated equipment and supplies.
- **Provide publicity after your screening.** Let your community know about the details of your event, including the number of persons who benefited from the free public screening. Use social media to highlight your event and issue a press release or other community announcement.
- **Use** MyLCI to share information about your screening

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<p align="center">Appendix E</p>

AHMC convenience sample questionnaire

1. Last time you saw an eye doctor?

    a. Where?

    b. Name of physician:

    c. If no, reason why you haven't seen one: ex. Transportation, cost, etc.

2. Do you currently wear eye glasses or contact lenses?

3. Have you ever had surgery on or around your eyes?

4. Is there any history of the following? (Please check if there is a history.) Identify if

   patient or family has hx.

- Diabetes _ _
- Multiple Sclerosis _ _
- Blindness _ _
- Glaucoma _ _
- High Blood Pressure _ _
- Strabismus / crossed eye _ _
- Amblyopia / lazy eye _ _
- Thyroid Condition _ _
- Cataracts _ _
- Brain Tumor _ _

5. Do you experience any of the following: If yes, when?

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- Blurred vision at distance _ _

- Blurred vision at near _ _

- Halos around lights _ _

- Squinting, covering or closing one eye _ _

- Need for very bright light when reading _ _

- Need for very dim light when reading __

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Appendix F

Local Optometry/Eyewear Providers

Name	Address	Price	Insurance	Discount	Walk-in
Sears Optical	Dakota Square Mall 2400 10th St SW 701-858-0849	$75+	Medicaid/ Medicare	Extra 10% off on Tuesdays	Yes
JC Penny Optical	Dakota Square Mall 2400 10th St SW 701-837-9699	$75+	Medicaid/ Medicare	Periodically	Yes
Midwest Vision Center	Dakota Square Mall 2400 10th St SW 701-852-6836	$85+	Medicaid/ Medicare	Periodically	No
Family Vision Care	Walmart 3900 S. Broadway 701-839-8726	$65+	Medicaid/ Medicare	Periodically at Walmart Vision Center	Yes
Vision Source	1100 N. Broadway, Suite 110 701-852-2020	$125+	Medicaid/ Medicare	20% Same day cash discount	No
Johnson Eyewear	1525 31 Ave SW 701-857-6050	$90+	Medicare/ Medicaid (only if secondary)	Lions Club, AARP, Tricare, $25 off frame $150+	No
Century Eyewear	207 Main St S 701-852-5626	$80+	Medicaid/ Medicare	15% off when paying in full with cash	No

Disclaimer: This document does not list all providers within the Minot area. This is only to be used as a tool to assist you in finding a provider that is right for you. We do not recommend nor encourage you to see any particular vision provider.

Commented [NM21]: I really appreciate that you did this. Thank you!

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Appendix G

MSU Nursing Vision Screening Form

Client Information
Client Name:_____ Age:____ Date:_____
Location:_____ Nurse:_____
Client observed with glasses   Yes _____   No _____
Client normally wears glasses   Yes _____   No _____
Blind: (R/L)

History
Overall perception of health:_____
Date of last vision screen/eye exam:_____
Any eye injuries since last eye exam?   Yes _____   No _____
        If yes, explain:_____
        Did you seek medical care?   Yes _____   No _____
Any concerns with vision at this time?   Yes _____   No _____
Are you currently experiencing:

	Yes	No		Yes	No
Blurred vision			Difficulty seeing at night		
Dark spots			Eye pain		
Flashes of light			Seeing floating objects		
Halos/Rainbows around lights			Recent changes in vision		
Partial loss of vision			Sudden sensitivity to light		

Remarks:_____
_____
Eye surgeries:_____

Vitals
P: _____ BP: _____ R: _____ T: _____ Pain: _____ Remarks: _____

Assessment
Pupils: _____ Reaction: Brisk Sluggish   Pupil Size: _____

Snellen eye chart: Sitting/Standing   Glasses worn
                       Right eye: _____   Left eye: _____

Visual fields test:
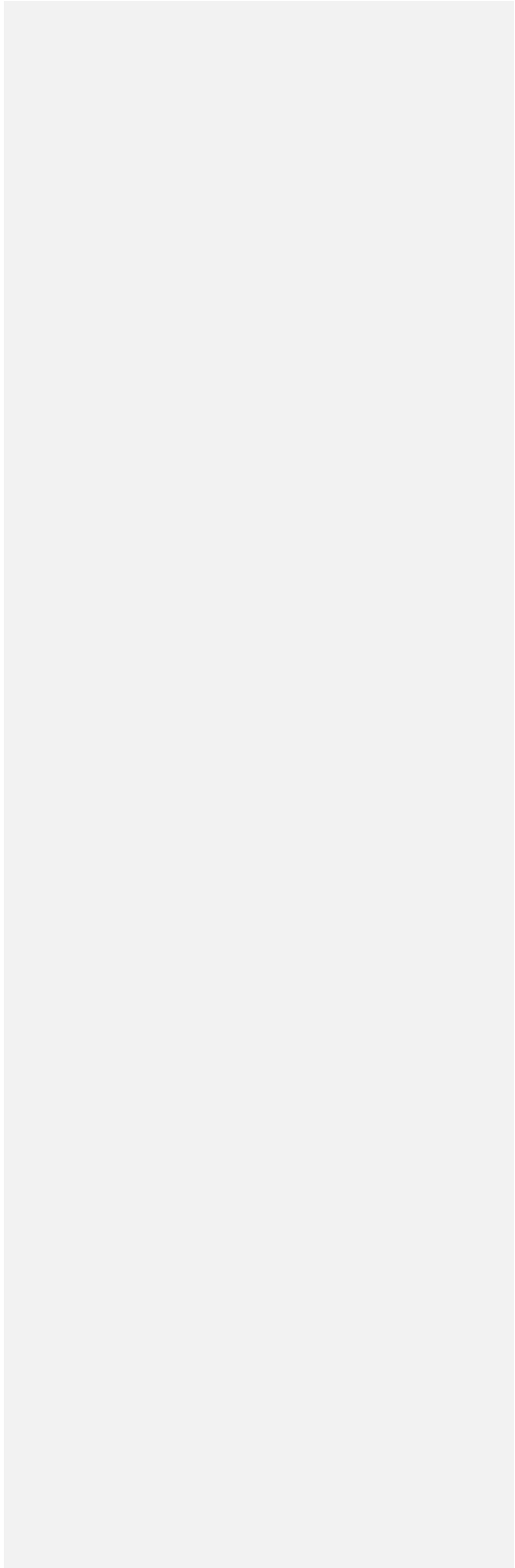   Anterior Posterior: ____ Inferior: ____ Superior: ____ Nasally: ____

Remarks:_____
_____
_____
Results: Pass / Borderline / Fail
Referral provided: Yes _____   No ____

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Nurse Signature: _____ Date: _____

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<div align="center">Appendix H</div>

Referral form

VISION REFERRAL AND REPORT FORM   Clinic testing site: Henry Towers
Mr/Mrs/Ms _____, you did not pass our vision test. This vision test is only a screening and does not test for complete eye health. We encourage you to make an appointment to see an eye doctor as soon as possible.

**   PLEASE TAKE THIS FORM TO YOUR EYE DOCTOR. YOUR SIGNATURE BELOW WILL GIVE PERMISSION TO THE DOCTOR TO RETURN INFORMATION TO US FOR RECORD KEEPING AND STATISTICAL REPORTING PURPOSES. THIS PERMISSION WILL BE EFFECTIVE FOR 1 YEAR AFTER THE DATE OF YOUR SIGNING.**

          If you have already seen an eye doctor in the last 6-12 months, please call your eye doctor and share this information with them. Your eye doctor will then decide if another eye examination is needed.

_____   _____
Client Signature   Screening Personnel Signature
Date: _____/_____/_____Date: _____/_____/_____

❋ ❋ ❋ ❋ ❋

	Screening Report	Eyecare Professional's Report

Visual Acuity Equipment Used: Snellen chart	☐ With Lenses ☐ Without Lenses
	RE_____
	LE_____
	          Both_____
		☐ With Lenses ☐ Without Lenses
		RE_____
		LE_____
		          Both_____

Vision field	☐	

VISION SCREENING

Appendix I

Vision Screening Social Marketing Project

Your Vision:

Vision is one of your body's key senses. Many believe there is nothing that can be done to prevent vision loss as you age. This simply isn't true. By acting quickly when you first notice vision changes, you greatly increase your chances of preventing or slowing any vision loss.

Remember:

When in doubt, contact your doctor regarding your vision

References
American Foundation for the Blind. (2015). Symptoms of vision problems. Retrieved from https://owl.english.purdue.edu/owl/resource/560/10/
Mayo Clinic. (2015). Why it's done. Retrieved from http://www.mayoclinic.org/tests-procedures/eye-exam/basics/why-its-done/prc-20014417
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All Eyes on Eye Sight

Vision Health and when it's Time to See Your Doctor

Public Health
Adult Health Maintenance Clinic
Henry Towers

Report any of the following symptoms as soon as they appear:

- Sudden changes in vision
- Severe, sudden eye pain
- Rainbows or halos around lights
- Flashes of light
- Seeing floating "spider webs"
- Seeing a "curtain coming down" in one eye
- Sudden sensitivity to light
- Any unusual pain or discomfort
- Any changes in the appearance of your eye

How often should I have my vision checked?

- Ages 30 – 39 years: Vision should be screened every 5 years.

- Ages 40-64: Vision should be screened every 2 – 4 years.

- Ages 65 years and older: Vision should be screened every 2 years.

- Your Doctor may want to have your vision checked more often so be sure to talk to your doctor about when to schedule your next screening.

Notes for your Doctor:

Please use this space to record any symptoms or issues you would like to speak to your Doctor about